

U.S.S.N. 09/858,387

2

PD-201006A

The following claims are submitted for convenience. The amendments have been made.

In the Claims:

1. (Previously Presented) A communications system for communicating with mobile user terminals comprising:

a base station having an adaptive antenna with a plurality of panels, each panel having a plurality of main array antenna elements for simultaneously generating a plurality of dynamic communication beams that move with the mobile terminals; and

a gateway station coupled to said base station, said gateway station forming a plurality of beams commands for each of the plurality of panels by communicating a plurality of control signals to the base station to form the plurality of dynamic communication beams.

2. (Canceled)

3. (Previously Presented) A communications system as recited in claim 1 wherein said base station comprises a plurality of auxiliary elements for canceling interference between the plurality of dynamic communication beams.

4. (Previously Presented) A communications system as recited in claim 3 wherein said plurality of auxiliary elements are weighted to provide interference canceling.

5. (Original) A communications system as recited in claim 1 wherein said gateway station is rf coupled to said base station.

U.S.S.N. 09/858,387

3

PD-201006A

6. (Original) A communications system as recited in claim 1 wherein said base station is wireless.

7. (Original) A communications system as recited in claim 1 wherein said gateway station is positioned on a stratospheric platform

8. (Previously Presented) A communications system as recited in claim 1 wherein said adaptive antenna comprises a phased array antenna.

9. (Previously Presented) A communications system as recited in claim 1 wherein said main array antenna elements are a modular.

10. (Previously Presented) A communications system as recited in claim 1 wherein said main array antenna elements comprise a plurality of modules coupled to a bus.

11. (Previously Presented) A communications system as recited in claim 10 wherein said bus is coupled to a controller.

12. (Previously Presented) A communications system as recited in claim 1 further comprising a plurality of user terminals receiving said plurality of dynamic communication beams.

U.S.S.N. 09/858,387

4

PD-201006A

13. (Original) A communications system as recited in claim 1 further comprising a limiter coupled within a feedback path.

14. (Original) A communications system as recited in claim 1 further comprising a nulling processor.

15. (Original) A communications system as recited in claim 14 wherein said nulling processor comprises an element code despread and a user code despread.

16. (Previously Presented) A communications system as recited in claim 15 wherein said nulling processor comprises a weighted feedback loop coupled to an output signal.

17. (Original) A communications system as recited in claim 15 wherein said nulling processor comprises auxiliary elements coupled to an output signal.

18. (Original) A communications system as recited in claim 1 wherein said base station comprises a plurality of summing blocks coupled to said main array element for generating a summed signal, said gateway station comprising an analog-to-digital converter coupled to a noise injection circuit and said summed signal, said summed signal coupled to a demultiplexer and a digital beam forming circuit.

U.S.S.N. 09/858,387

5

PD-201006A

19. (Original) A communication system as recited in claim 1 wherein said base station comprises a user code despread circuit coupled to an element code despread circuit which is coupled to said main array elements.

20. (Previously Presented) A communications system for communicating with mobile user terminals comprising:

a plurality of wireless base stations having adaptive antennas each having a plurality of panels, each panel having a plurality of main array antenna elements, each panel simultaneously generating a plurality of dynamic communication beams that move with the mobile terminals;

a gateway station coupled to said plurality of wireless base stations through a plurality of multiple dynamic links, said gateway station forming a plurality of beams for each of the plurality of panels by communicating a plurality of control signals to the base station to form the plurality of dynamic communication beams so that a user receives at least a first link from a first base station of the plurality of wireless base stations and a second link from a second base station of the plurality of wireless base stations.

21. (Previously Presented) A method of operating a communication system having a gateway station, a plurality of mobile terminals and a plurality base station comprising:

at the gateway station, dividing a communication signal into a control signal corresponding to a plurality of elements of a plurality of panels of a plurality of adaptive antennas of a plurality of base stations, said control signals corresponding to a plurality of multiple dynamic links ;

directing the control signals to the plurality of base stations; and

U.S.S.N. 09/858,387

6

PD-201006A

generating multiple dynamic links from the plurality of panels of the plurality of base stations so that more than one dynamic link is generated simultaneously from one panel that move with the mobile terminals.

22. (Original) A method as recited in claim 21 further comprising canceling interference between said multiple dynamic links.